

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/070447 A3

(51) International Patent Classification⁷: **A61K 38/19**,
A61P 35/04, G01N 33/50

(21) International Application Number:
PCT/US2005/001630

(22) International Filing Date: 21 January 2005 (21.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/537,985 21 January 2004 (21.01.2004) US

(71) Applicant (for all designated States except US): **CHIRON CORPORATION** [US/US]; Intellectual Property R338, P.O. Box 8097, Emeryville, CA 94662-8097 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ZIMMERMAN**, Deborah Lee [US/US]; 3841 17th Street, San Francisco, CA 94114 (US). **HARROWE**, Gregory Martin [US/US]; 1109 Spruce Street, Berkeley, CA 94707 (US). **LIU**, Cheng [US/US]; 2266 Bristlecone Road, Richmond, CA 94803 (US). **KOTHS**, Kirston [US/US]; 4560 Horton Street, Emeryville, CA 94608-2917 (US). **KAVANAUGH**, William Michael [US/US]; 22 Orchard Road, Orinda, CA 94563 (US). **LONG**, Li; Chiron Corporation, P.O. Box 8097, Emeryville, CA 94662 (US).

(74) Agent: **ALEXANDER**, Lisa E.; Chiron Corporation, Intellectual Property R-338, P.O. Box 8097, Emeryville, CA 94662 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
8 December 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: M-CSF MUTEINS AND USES THEREOF

(57) Abstract: M-CSF muteins are provided, along with pharmaceutical compositions containing a M-CSF mutein, kits containing a pharmaceutical composition, methods of preventing and treating bone metastases in a subject afflicted with metastatic cancer, and methods of screening for M-CSF muteins.



WO 2005/070447 A3